Appl. No.: 09/878,104
Amdt. dated: 3/8/2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently amended): A predistortion driver circuit for a serially connected downstream Doherty power amplifier having predetermined characteristics, the predistortion driver circuit comprising:

a Doherty driver amplifier having a carrier amplifier and a peak amplifier, each of said carrier and peak amplifiers having a respective bias level, the bias levels for said Doherty driver amplifier selected to provide for predistortion of predetermined characteristics of said serially connected downstream Doherty power amplifier, wherein said predetermined characteristics include gain as a function of input power level and phase and wherein said bias levels are selected to provide gain expansion as a function of input power level.

Claim 2 (Cancelled)

Claim 3 (Cancelled)

Claim 4 (Cancelled)

Claim 5 (Currently amended): A predistortion driver circuit for a Doherty power amplifier having predetermined characteristics, the predistortion driver circuit comprising:

a Doherty driver amplifier having a carrier amplifier and a peak amplifier, each of said peak and carrier amplifiers having a respective bias level, the bias levels for said Doherty driver amplifier selected to provide for predistortion of predetermined characteristics of the bias levels of said Doherty power amplifier, wherein the bias levels are selected to provide phase compression as a function of input power level, wherein said predetermined characteristics include gain as a function of input power level and phase and wherein said bias levels are selected to provide gain expansion as a function of input power level.

Claim 6 (Currently amended): A linear power amplifier circuit comprising:

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a Doherty power amplifier having predetermined characteristics including input power range as a function of RF input power; and

an upstream predistortion driver circuit configured as a Doherty amplifier, serially coupled to said Doherty power amplifier, said upstream predistortion driver circuit having characteristics selected to precompensate for said predetermined characteristics of said power amplifier as a function of input power, wherein said predetermined characteristics include gain as a function of input power level and phase and wherein said bias level is selected to provide gain expansion as a function of input power level.

Claim 7 (Cancelled)

Claim 8 (Previously amended): The linear power amplifier circuit as recited in claim 6, wherein said Doherty power amplifier has a predetermined gain compression characteristic as a function of input power.

Claim 9 (Currently amended): The linear power amplifier circuit as recited in claim 6, wherein said upstream predistortion driver circuit is configured to have a gain expansion characteristic such that the output gain of the circuit is relatively linear over the input power range of the power amplifier.

Claim 10 (Currently amended): A linear power amplifier circuit comprising:

a Doherty power amplifier having predetermined characteristics including input power range as a function of RF input power; and

an upstream predistortion driver circuit configured as a Doherty amplifier, serially coupled to said Doherty power amplifier, said predistortion circuit having characteristics selected to precompensate for said predetermined characteristics of said power amplifier as a function of input power, wherein said Doherty power amplifier having a predetermined phase compression characteristic as a function of input power, wherein said predetermined characteristics include

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gain as a function of input power level and phase and wherein said bias levels are selected to provide gain expansion as a function of input power level.

Claim 11 (Currently amended): The linear power amplifier circuit as recited in claim 10, wherein said upstream predistortion driver circuit is configured to have a phase expansion characteristic such that the output gain of the circuit is relatively linear over the input range of the power amplifier.

Claim 12 (Currently amended): A linear power amplifier circuit comprising:

a Doherty power amplifier having predetermined characteristics including an input power range as a function of RF input power;

an upstream predistortion driver circuit configured as a Doherty driver amplifier for precompensating said predetermined characteristics of said Doherty power amplifier; and

a circuit for electronically tuning said upstream predistortion circuit so that a predetermined characteristic of the linear power amplifier circuit is linear over the input power range of the Doherty power amplifier, said electronic tuning circuit configured to adjust the bias characteristic of said upstream predistortion circuit, wherein said predetermined characteristics include gain as a function of input power level and phase and wherein said bias levels of said Doherty driver amplifier are selected to provide gain expansion as a function of input power level.

Claim 13 (Cancelled)

Claim 14 (Previously amended): The linear power amplifier circuit as recited in claim 12, wherein said predetermined characteristic is the output gain of the linear power amplifier circuit, wherein said tuning means enables bias level to be adjusted so that the overall output gain of the Doherty power amplifier and upstream predistortion circuit is relatively linear over the input range of the Doherty power amplifier.

Claim 15 (Currently amended): A linear power amplifier circuit comprising:

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a Doherty power amplifier having predetermined characteristics including an input power range as a function of RF input power;

an upstream predistortion circuit configured as a Doherty driver amplifier for precompensating said predetermined characteristics of said Doherty power amplifier; and

a circuit for electronically tuning said upstream predistortion circuit so that a predetermined characteristic of the linear power amplifier circuit is linear over the input power range of the Doherty power amplifier, wherein said power amplifier is configured as a Doherty amplifier having a predetermined phase compression characteristic as a function of input power, wherein said predetermined characteristics further include gain as a function of input power level and wherein said bias levels are selected to provide gain expansion as a function of input power level.

Claim 16 (Previously amended): The linear power amplifier circuit as recited in claim 15, wherein said tuning means includes means for electronically tuning the predistortion circuit such that the output phase characteristic of the linear power amplifier circuit is relatively linear over the input range of the power amplifier.